

Control Valve for Forklift

Forklift Control Valve - Automatic control systems were first created over two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is thought to be the first feedback control equipment on record. This clock kept time by means of regulating the water level within a vessel and the water flow from the vessel. A popular style, this successful machine was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

All through history, different automatic machines have been used to simply entertain or to accomplish specific tasks. A common European design during the seventeenth and eighteenth centuries was the automata. This machine was an example of "open-loop" control, consisting dancing figures which would repeat the same job over and over.

Feedback or likewise known as "closed-loop" automatic control equipments include the temperature regulator found on a furnace. This was actually developed in the year 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed during 1788 by James Watt and utilized for regulating the speed of steam engines.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," which can explain the instabilities demonstrated by the fly ball governor. He utilized differential equations to explain the control system. This paper demonstrated the importance and helpfulness of mathematical methods and models in relation to understanding complex phenomena. It also signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's study.

New control theories and new developments in mathematical techniques made it possible to more precisely control more dynamic systems as opposed to the original model fly ball governor. These updated methods consist of different developments in optimal control in the 1950s and 1960s, followed by development in stochastic, robust, adaptive and optimal control techniques in the 1970s and the 1980s.

New applications and technology of control methodology has helped make cleaner engines, with more efficient and cleaner processes helped make communication satellites and even traveling in space possible.

At first, control engineering was performed as a part of mechanical engineering. As well, control theory was firstly studied as part of electrical engineering as electrical circuits can often be simply explained with control theory methods. Today, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. To be able to implement electrical control systems, the correct technology was unavailable at that time, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a very efficient mechanical controller which is still often used by some hydro factories. Ultimately, process control systems became obtainable prior to modern power electronics. These process controls systems were often utilized in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control devices, many of which are still being utilized these days.